

EVOLUTION – ORIGIN OF LIFE

1. Abiogenesis means:
 - (a) Spontaneous generation
 - (b) Origin of viruses and microbes
 - (c) Origin of life from living organisms
 - (d) Origin of life from non-living organism
2. Theory of spontaneous generation was given by:
 - (a) Redi
 - (b) Pasteur
 - (c) Van Helmont
 - (d) Spallanzani
3. The idea of spontaneous generation was first refuted by:
 - (a) F. Redi
 - (b) S.L. Miller
 - (c) L. Pasteur
 - (d) L. Spallanzani
4. Mark the correct statement:
 - (a) L. Pasteur did his experiments of flesh
 - (b) F. Redi proposed the theory of special creation
 - (c) Father Surez discarded the view of special creation
 - (d) L. Spallanzani stated that air carried microorganisms
5. Swan-necked flask experiment was done by:
 - (a) Aristotle
 - (b) Robert Koch
 - (c) Louis Pasteur
 - (d) Francesco Redi
6. Pasteur's experiments and similar ones that followed convinced most people that spontaneous generation of life did not happen, because:
 - (a) Pasteur was extremely meticulous
 - (b) Pasteur did not boil his flasks for a long time
 - (c) Pasteur used very fine mesh screens to cover his flasks
 - (d) Pasteur's swan-necked flasks ruled out the objection that spoiled air could have contaminated his experiments
7. The early belief of the spontaneous origin of life was disproved by:
 - (a) Lederberg
 - (b) Robert Koch
 - (c) Louis Pasteur
 - (d) Charles Darwin
8. The idea that life originates from pre-existing life is referred as :
 - (a) Biogenesis theory
 - (b) Abiogenesis theory
 - (c) Extraterrestrial theory
 - (d) Special creation theory
9. Life was created by some supernatural power. This theory is :
 - (a) Abiogenesis
 - (b) Spore theory
 - (c) Special creation theory
 - (d) Spontaneous generation
10. Life came from outer space. This theory is :
 - (a) Spore theory
 - (b) Naturalistic theory
 - (c) Special creation theory
 - (d) Spontaneous generation

11. About how long ago was the Earth formed?
 - (a) 3.0 billion years ago
 - (b) 10 billion years ago
 - (c) 4.6 billion years ago
 - (d) 20 billion years ago
 12. The sun and planets formed from:
 - (a) Aggregate of uranium
 - (b) Collision of meteorites
 - (c) Division of pre-existing stars
 - (d) Cloud of cosmic dust and gases
 13. The hypothesis that the early atmosphere, combined with an energy source, produced organic monomer was developed in the 1920s by:
 - (a) Miller and Urey
 - (b) Fox and Pauling
 - (c) Curiee and Pasteur
 - (d) Oparin and Haldane
 14. The book 'The Origin of Life' was written by:
 - (a) L. Pasteur
 - (b) S.W. Fox
 - (c) A.I. Oparin
 - (d) C. Darwin
 15. The concept of chemical evolution is based on:
 - (a) possible origin of life by combination of chemicals under suitable environmental conditions
 - (b) interaction of water, air and clay under intense heat
 - (c) effect of solar radiation on chemicals
 - (d) crystallization of chemicals
 16. Oparin's theory of 'Origin of life' is based on :
 - (a) chemical evolution
 - (b) cosmic evolution
 - (c) artificial synthesis
 - (d) organic evolution
 17. According to Oparin, which one of the following was not present in the primitive atmosphere of the Earth?
 - (a) Oxygen
 - (b) Methane
 - (c) Hydrogen
 - (d) Water vapour
 18. Which one is present today but was absent about 3 to 5 million years ago?
 - (a) N_2
 - (b) O_2
 - (c) H_2
 - (d) CH_4
 19. The basic components of atmosphere of primitive Earth were:
 - (a) ammonia, methane and water
 - (b) methane, ozone, nitrogen and water
 - (c) hydrogen, nitrogen, methane and water
 - (d) ammonia, methane, hydrogen and water
 20. Which of the following has replaced methane of the primitive atmosphere as the major carbon-containing compound of the present day Earth's atmosphere?
 - (a) Coal
 - (b) Hydrocarbons
 - (c) Carbon dioxide
 - (d) Carbon monoxide
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21. Life originated in:
- (a) air
 - (b) water
 - (c) land
 - (d) all of these
22. There is no life in moon due to the absence of:
- (a) water
 - (b) light
 - (c) temperature
 - (d) oxygen
23. The water of primitive ocean during the time of origin of life has been called 'hot dilute soup of oceanic substances' by:
- (a) Sidney Fox
 - (b) A.I. Oparin
 - (c) Stanley Miller
 - (d) J.B.S. Haldane
24. Which English scientist worked on origin of life and finally settled in India?
- (a) A.I. Oparin
 - (b) J.B.S. Haldane
 - (c) Father Suarez
 - (d) Archbishop Ussher
25. One of the possible early sources of energy was/were:
- (a) Chlorophyll
 - (b) Green plants
 - (c) Carbon dioxide
 - (d) UV rays and Lightening
26. The primitive Earth conditions were experimentally shown by:
- (a) Miller
 - (b) Urey
 - (c) Oparin
 - (d) Both (a) and (b)
27. Stanley Miller proposed origin of life by:
- (a) Biogenesis
 - (b) Abiogenesis
 - (c) Chemical synthesis
 - (d) None of these
28. The category of molecules produced by the Miller-Urey experiments was:
- (a) organic polymers
 - (b) inorganic polymers
 - (c) organic monomers
 - (d) inorganic monomers
29. Which of the following is formed in Stanley Miller's classic experiment?
- (a) Amino acids
 - (b) Microspheres
 - (c) Nucleic acids
 - (d) UV radiations
30. Stanley Miller did his experiments and produced amino acids by electric discharge passed in NH_3 , H_2O , CH_4 and.....
- (a) oxygen
 - (b) hydrogen
 - (c) nitrogen
 - (d) carbon dioxide

31. The energy used in the Miller-Urey experiment was:
- (a) photo energy
 - (b) electric spark
 - (c) atomic radiation
 - (d) mechanical energy
32. The gases used in the spark-discharge apparatus were:
- (a) H_2 , CH_4 and NH_3
 - (b) CO , NH_3 and CH_4
 - (c) O_2 , CO_2 and NH_3
 - (d) NH_3 , CH_4 and O_2
33. Miller synthesized simple amino acids from one of the following mixtures in an experiment:
- (a) H_2 , O_2 , N_2 (1 : 2 : 1) and Water vapour
 - (b) H_2 , O_2 , N_2 (2 : 1 : 2) and Water vapour
 - (c) H_4 , NH_3 , H_2 (2 : 1 : 2) and Water vapour
 - (d) CH_4 , NH_3 , H_2 (1 : 2 : 1) and Water vapour
34. Formation of most of the amino acids as well as adenine and other nucleic acid bases from inorganic molecules was experimentally shown by:
- (a) Hugo de Vries
 - (b) H.C. Urey and Miller
 - (c) A.I. Oparin and J.B.S. Haldane
 - (d) Lazzaro Spallanzani and Louis Pasteur
35. Life cannot originate from inorganic material at present because of:
- (a) absence of raw material
 - (b) very low atmospheric temperature
 - (c) high degree of environment pollution
 - (d) very high amount of oxygen in atmosphere
36. Nucleoprotein most probably gave the first sign of:
- (a) life
 - (b) proteins
 - (c) mimicry
 - (d) evolution
37. The simple organic compounds that may have first evolved in the direction of origin of life on the Earth must have been:
- (a) Protein and amino acids
 - (b) Urea and amino acids
 - (c) Protein and nucleic acids
 - (d) Urea and nucleic acids
38. Origin of life was due to:
- (a) will of God
 - (b) spontaneous generation
 - (c) effect of sun-rays on mud
 - (d) none of these
39. The correct sequence of the substances appeared during the course of origin of life on Earth was:
- (a) Glucose, Amino acids, Nucleic acids, Proteins
 - (b) Ammonia, Amino acids, Proteins, Nucleic acids
 - (c) Nucleotides, Amino acids, Nucleic acids, Enzymes
 - (d) Amino acids, Ammonia, Phosphates, Nucleic acids
40. First life on the Earth were:
- (a) autotrophs
 - (b) cyanobacteria
 - (c) Photoautotrophs
 - (d) chemoheterotrophs

41. The first organisms which were anaerobes are termed as:
(a) pre-cells
(b) coacervates
(c) Chemoheterotrophs
(d) none of these
42. It is believed that the organisms first inhabited Earth's surface were:
(a) autotrophs
(b) mixotrophs
(c) heterotrophs
(d) chromatotrophs
43. Organisms which obtain energy by the oxidation of reduced inorganic compounds are called:
(a) Saprozoic
(b) Chemoautotrophs
(c) Photoautotrophs
(d) Coproheterotrophs
44. Most biologists think that RNA was the first genetic material because:
(a) RNA is simpler than DNA
(b) DNA is not stable in hydrophobic environments
(c) DNA is the universal genetic material of eukaryotes
(d) The existence of ribozymes suggests that early cells could have used RNA to catalyse chemical reactions and transfer information
45. Most of the history of life deals with the evolution of:
(a) Eukaryotes
(b) Prokaryotes
(c) Photosynthesizers
(d) Plants and animals
46. Which type of respiration probably arose first?
(a) Aerobic as it is more complex
(b) Aerobic as it releases more energy
(c) Anaerobic as it releases more energy
(d) Anaerobic as early atmosphere contained little or no oxygen
47. The oldest fossil cells resemble:
(a) Amoeba
(b) Red algae
(c) Autotrophic
(d) Heterotrophic bacteria
48. Which was first photosynthetic organism?
(a) Red algae
(b) Green algae
(c) Cyanobacteria
(d) None of these
49. The oldest eukaryotic fossil is :
(a) 1.5 billion years old
(b) 3.5 billion years old
(c) 2.5 billion years old
(d) 600 million years old
50. Which of the following planets is supposed to have life?
(a) Mars (b) Jupiter
(c) Mercury (d) Neptune
51. In the origin of life, microspheres are most primitive protobion which have a membrane of:
(a) fats (b) lipid
(c) carbohydrates (d) Lipid and proteins

52. Transformation of the early reducing atmosphere of the Earth into an oxidizing atmosphere was mainly due to the activities of :
- (a) Anaerobic heterotrophs
 - (b) Aerobic photosynthesizers
 - (c) Anaerobic photosynthesizers
 - (d) Anaerobic chemoheterotrophs
53. Which one does not confirm to the theory of “Biogenesis”
- (a) Francesco Redi’s experiment
 - (b) Spallanzani’s experiment
 - (c) Louis Pasteur’s experiment
 - (d) Von Helmont’s experiment
54. Who proposed that the first form of life could have come from pre-existing non-living organic molecules?
- (a) S.L. Miller
 - (b) Hugo de Vries
 - (c) Charles Darwin
 - (d) Alfred Wallace
55. Biologists define evolution as :
- (a) heritable change in a line of descent over generations
 - (b) inheritance of characteristics acquired by the individuals
 - (c) the origin of species
 - (d) none of the above
56. Basic idea of evolution is:
- (a) special creation
 - (b) cosmic evolution
 - (c) spontaneous generation
 - (d) descent with modification
57. Evolution will not occur is:
- (a) genes are without effect
 - (b) somatic variations are not heritable
 - (c) there is no environmental influence
 - (d) there are no genetic variations in individuals of a population
58. Concept of evolution is an excellent working hypothesis to approach the problem of:
- (a) matter, energy, and life
 - (b) environmental conditions
 - (c) prodigality in reproduction
 - (d) diversity of organisms upon Earth
59. For evolution, the most important requirement is:
- (a) variations
 - (b) adaptations
 - (c) natural selection
 - (d) developmental anatomy
60. Darwin’s finches provide an excellent evidence in favour of evolution. This evidence comes from the field of :
- (a) Anatomy
 - (b) Biogeography
 - (c) Embryology
 - (d) Palaeontology
61. Galapagos Islands are located in the:
- (a) Pacific Ocean
 - (b) Atlantic Ocean
 - (c) Indian Ocean
 - (d) Mediterranean Sea

62. Darwin's finches are found in:
- (a) Tahiti
 - (b) Tundra
 - (c) Galapagos Island
 - (d) None of these
63. Darwin's finches are an excellent example of:
- (a) Connecting links
 - (b) Brood parasitism
 - (c) Adaptive radiation
 - (d) Seasonal migration
64. Darwin's finches represents:
- (a) Climatic variation
 - (b) Geographical isolation
 - (c) Reproductive isolation
 - (d) Morphological variation
65. Adaptive radiation which takes place in closely related organisms leads to:
- (a) Parallel evolution
 - (b) Convergent evolution
 - (c) Divergent evolution
 - (d) None of these
66. Parallelism is:
- (a) Adaptive divergence
 - (b) Adaptive convergence of closely related groups
 - (c) Adaptive divergence of widely separated species
 - (d) Adaptive convergence of widely different species
67. The organs of different species that are related to each other through common descent though becomes functionally different are called :
- (a) Vestigial
 - (b) Analogous
 - (c) Homologous
 - (d) None of these
68. Structures of various animals which are similar in basic plan and development are referred to as :
- (a) Analogous
 - (b) Homologous
 - (c) Homoplastic
 - (d) Homozygous
69. Two organs which are similar in structure and origin, but not necessarily in function are called:
- (a) Apocrine
 - (b) Analogous
 - (c) Homologous
 - (d) None of these
70. Homology does not refer to:
- (a) Divergent evolution
 - (b) Common descent
 - (c) Convergent evolution
 - (d) Adaptive radiation
71. An important evidence in favour of organic evolution is the occurrence of :
- (a) Homologous and analogous organs
 - (b) Homologous and vestigial organs
 - (c) Analogous and vestigial organs
 - (d) Homologous organs only